The Climate of History: Four Theses

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The current planetary crisis of climate change or global warming elicits a variety of responses in individuals, groups, and governments, ranging from denial, disconnect, and indifference to a spirit of engagement and activism of varying kinds and degrees. These responses saturate our sense of the now. Alan Weisman's best-selling book *The World without Us* suggests a thought experiment as a way of experiencing our present: "Suppose that the worst has happened. Human extinction is a fait accompli. . . . Picture a world from which we all suddenly vanished. . . . Might we have left some faint, enduring mark on the universe? . . . Is it possible that, instead of heaving a huge biological sigh of relief, the world without us would miss us?"[1] I am drawn to Weisman's experiment as it tellingly demonstrates how the current crisis can precipitate a sense of the present that disconnects the future from the past by putting such a future beyond the grasp of historical sensibility. The discipline of history exists on the assumption that our past, present, and future are connected by a certain continuity of human experience. We normally envisage the future with the help of the same faculty that allows us to picture the past. Weisman's thought experiment illustrates the historicist paradox that inhabits contemporary moods of anxiety and concern about the finitude of humanity. To go along with Weisman's experiment, we have to insert ourselves into

This essay is dedicated to the memory of Greg Dening.

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1. Alan Weisman, *The World without Us* (New York, 2007), pp. 3–5.

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a future "without us" in order to be able to visualize it. Thus, our usual historical practices for visualizing times, past and future, times inaccessible to us personally—the exercise of historical understanding—are thrown into a deep contradiction and confusion. Weisman's experiment indicates how such confusion follows from our contemporary sense of the present insofar as that present gives rise to concerns about our future. Our historical sense of the present, in Weisman's version, has thus become deeply destructive of our general sense of history.

I will return to Weisman's experiment in the last part of this essay. There is much in the debate on climate change that should be of interest to those involved in contemporary discussions about history. For as the idea gains ground that the grave environmental risks of global warming have to do with excessive accumulation in the atmosphere of greenhouse gases produced mainly through the burning of fossil fuel and the industrialized use of animal stock by human beings, certain scientific propositions have come into circulation in the public domain that have profound, even transformative, implications for how we think about human history or about what the historian C. A. Bayly recently called "the birth of the modern world."[2] Indeed, what scientists have said about climate change challenges not only the ideas about the human that usually sustain the discipline of history but also the analytic strategies that postcolonial and postimperial historians have deployed in the last two decades in response to the postwar scenario of decolonization and globalization.

In what follows, I present some responses to the contemporary crisis from a historian's point of view. However, a word about my own relationship to the literature on climate change—and indeed to the crisis itself—may be in order. I am a practicing historian with a strong interest in the nature of history as a form of knowledge, and my relationship to the science of global warming is derived, at some remove, from what scientists and other informed writers have written for the education of the general public. Scientific studies of global warming are often said to have originated with the discoveries of the Swedish scientist Svante Arrhenius in the 1890s, but self-conscious discussions of global warming in the public realm

2. See C. A. Bayly, *The Birth of the Modern World, 1780–1914: Global Connections and Comparisons* (Malden, Mass., 2004).

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began in the late 1980s and early 1990s, the same period in which social scientists and humanists began to discuss globalization.[3] However, these discussions have so far run parallel to each other. While globalization, once recognized, was of immediate interest to humanists and social scientists, global warming, in spite of a good number of books published in the 1990s, did not become a public concern until the 2000s. The reasons are not far to seek. As early as 1988 James Hansen, the director of NASA's Goddard Institute of Space Studies, told a Senate committee about global warming and later remarked to a group of reporters on the same day, "It's time to stop waffling . . . and say that the greenhouse effect is here and is affecting our climate."[4] But governments, beholden to special interests and wary of political costs, would not listen. George H. W. Bush, then the president of the United States, famously quipped that he was going to fight the greenhouse effect with the "White House effect."[5] The situation changed in the 2000s when the warnings became dire, and the signs of the crisis—such as the drought in Australia, frequent cyclones and brush fires, crop failures in many parts of the world, the melting of Himalayan and other mountain glaciers and of the polar ice caps, and the increasing acidity of the seas and the damage to the food chain—became politically and economically inescapable. Added to this were growing concerns, voiced by many, about the rapid destruction of other species and about the global footprint of a human population poised to pass the nine billion mark by 2050.[6]

As the crisis gathered momentum in the last few years, I realized that all my readings in theories of globalization, Marxist analysis of capital, subaltern studies, and postcolonial criticism over the last twenty-five years, while enormously useful in studying globalization, had not really prepared me for making sense of this planetary conjuncture within which humanity finds itself today. The change of mood in globalization analysis may be seen by comparing Giovanni Arrighi's masterful history of world capitalism, *The Long Twentieth Century* (1994), with his more recent *Adam Smith*

3. The prehistory of the science of global warming going back to nineteenth-century European scientists like Joseph Fourier, Louis Agassiz, and Arrhenius is recounted in many popular publications. See, for example, the book by Bert Bolin, the chairman of the UN's Intergovernmental Panel on Climate Change (1988–1997), *A History of the Science and Politics of Climate Change: The Role of the Intergovernmental Panel on Climate Change* (Cambridge, 2007), pt. 1.

4. Quoted in Mark Bowen, *Censoring Science: Inside the Political Attack on Dr. James Hansen and the Truth of Global Warming* (New York, 2008), p. 1.

5. Quoted in ibid., p. 228. See also "Too Hot to Handle: Recent Efforts to Censor Jim Hansen," *Boston Globe*, 5 Feb. 2006, p. E1.

6. See, for example, Walter K. Dodds, *Humanity's Footprint: Momentum, Impact, and Our Global Environment* (New York, 2008), pp. 11–62.

in Beijing (2007), which, among other things, seeks to understand the implications of the economic rise of China. The first book, a long meditation on the chaos internal to capitalist economies, ends with the thought of capitalism burning up humanity "in the horrors (or glories) of the escalating violence that has accompanied the liquidation of the Cold War world order." It is clear that the heat that burns the world in Arrighi's narrative comes from the engine of capitalism and not from global warming. By the time Arrighi comes to write *Adam Smith in Beijing*, however, he is much more concerned with the question of ecological limits to capitalism. That theme provides the concluding note of the book, suggesting the distance that a critic such as Arrighi has traveled in the thirteen years that separate the publication of the two books.[7] If, indeed, globalization and global warming are born of overlapping processes, the question is, How do we bring them together in our understanding of the world?

Not being a scientist myself, I also make a fundamental assumption about the science of climate change. I assume the science to be right in its broad outlines. I thus assume that the views expressed particularly in the 2007 Fourth Assessment Report of the Intergovernmental Panel on Climate Change of the United Nations, in the *Stern Review,* and in the many books that have been published recently by scientists and scholars seeking to explain the science of global warming leave me with enough rational ground for accepting, unless the scientific consensus shifts in a major way, that there is a large measure of truth to anthropogenic theories of climate change.[8] For this position, I depend on observations such as the following one reported by Naomi Oreskes, a historian of science at the University of California, San Diego. Upon examining the abstracts of 928 papers on global warming published in specialized peer-reviewed scientific journals

7. Giovanni Arrighi, *The Long Twentieth Century: Money, Power, and the Origins of Our Times* (1994; London, 2006), p. 356; see Arrighi, *Adam Smith in Beijing: Lineages of the Twenty-First Century* (London, 2007), pp. 227–389.

8. An indication of the growing popularity of the topic is the number of books published in the last four years with the aim of educating the general reading public about the nature of the crisis. Here is a random list of some of the most recent titles that inform this essay: Mark Maslin, *Global Warming: A Very Short Introduction* (Oxford, 2004); Tim Flannery, *The Weather Makers*: *The History and Future Impact of Climate Change* (Melbourne, 2005); David Archer, *Global Warming: Understanding the Forecast* (Malden, Mass., 2007); *Global Warming,* ed. Kelly Knauer (New York, 2007); Mark Lynas, *Six Degrees: Our Future on a Hotter Planet* (Washington, D.C., 2008); William H. Calvin, *Global Fever: How to Treat Climate Change* (Chicago, 2008); James Hansen, "Climate Catastrophe," *New Scientist*, 28 July–3 Aug. 2007, pp. 30–34; Hansen et al., "Dangerous Human-Made Interference with Climate: A GISS ModelE Study," *Atmospheric Chemistry and Physics* 7, no. 9 (2007): 2287–2312; and Hansen et al., "Climate Change and Trace Gases," *Philosophical Transactions of the Royal Society*, 15 July 2007, pp. 1925–54. See also Nicholas Stern, *The Economics of Climate Change: The "Stern Review"* (Cambridge, 2007).

between 1993 and 2003, Oreskes found that not a single one sought to refute the "consensus" among scientists "over the reality of human-induced climate change." There is disagreement over the amount and direction of change. But "virtually all professional climate scientists," writes Oreskes, "agree on the reality of human-induced climate change, but debate continues on tempo and mode."[9] Indeed, in what I have read so far, I have not seen any reason yet for remaining a global-warming skeptic.

The scientific consensus around the proposition that the present crisis of climate change is man-made forms the basis of what I have to say here. In the interest of clarity and focus, I present my propositions in the form of four theses. The last three theses follow from the first one. I begin with the proposition that anthropogenic explanations of climate change spell the collapse of the age-old humanist distinction between natural history and human history and end by returning to the question I opened with: How does the crisis of climate change appeal to our sense of human universals while challenging at the same time our capacity for historical understanding?

Thesis 1: Anthropogenic Explanations of Climate Change Spell the Collapse of the Age-old Humanist Distinction between Natural History and Human History

Philosophers and students of history have often displayed a conscious tendency to separate human history—or the story of human affairs, as R. G. Collingwood put it—from natural history, sometimes proceeding even to deny that nature could ever have history quite in the same way humans have it. This practice itself has a long and rich past of which, for reasons of space and personal limitations, I can only provide a very provisional, thumbnail, and somewhat arbitrary sketch.[10]

We could begin with the old Viconian-Hobbesian idea that we, humans, could have proper knowledge of only civil and political institutions because we made them, while nature remains God's work and ultimately inscrutable to man. "The true is identical with the created: *verum ipsum factum*" is how Croce summarized Vico's famous dictum.[11] Vico scholars have sometimes protested that Vico did not make such a drastic separation

9. Naomi Oreskes, "The Scientific Consensus on Climate Change: How Do We Know We're Not Wrong?" in *Climate Change: What It Means for Us, Our Children, and Our Grandchildren,* ed. Joseph F. C. Dimento and Pamela Doughman (Cambridge, Mass., 2007), pp. 73, 74.

10. A long history of this distinction is traced in Paolo Rossi, *The Dark Abyss of Time: The History of the Earth and the History of Nations from Hooke to Vico,* trans. Lydia G. Cochrane (1979; Chicago, 1984).

11. Benedetto Croce, *The Philosophy of Giambattista Vico*, trans. R. G. Collingwood (1913;

between the natural and the human sciences as Croce and others read into his writings, but even they admit that such a reading is widespread.[12]

This Viconian understanding was to become a part of the historian's common sense in the nineteenth and twentieth centuries. It made its way into Marx's famous utterance that "men make their own history, but they do not make it just as they please" and into the title of the Marxist archaeologist V. Gordon Childe's well-known book, *Man Makes Himself*.[13] Croce seems to have been a major source of this distinction in the second half of the twentieth century through his influence on "the lonely Oxford historicist" Collingwood who, in turn, deeply influenced E. H. Carr's 1961 book, *What Is History?* which is still perhaps one of the best-selling books on the historian's craft.[14] Croce's thoughts, one could say, unbeknown to his legatees and with unforeseeable modifications, have triumphed in our understanding of history in the postcolonial age. Behind Croce and his adaptations of Hegel and hidden in Croce's creative misreading of his predecessors stands the more distant and foundational figure of Vico.[15] The connections here, again, are many and complex. Suffice it to say for now that Croce's 1911 book, *La filosofia di Giambattista Vico,* dedicated, significantly, to Wilhelm Windelband, was translated into English in 1913 by none other than Collingwood, who was an admirer, if not a follower, of the Italian master.

However, Collingwood's own argument for separating natural history from human ones developed its own inflections, while running, one might say, still on broadly Viconian lines as interpreted by Croce. Nature, Collingwood remarked, has no "inside." "In the case of nature, this distinction between the outside and the inside of an event does not arise. The events of

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New Brunswick, N.J., 2002), p. 5. Carlo Ginzburg has alerted me to problems with Collingwood's translation.

12. See the discussion in Perez Zagorin, "Vico's Theory of Knowledge: A Critique," *Philosophical Quarterly* 34 (Jan. 1984): 15–30.

13. Karl Marx, "The Eighteenth Brumaire of Louis Bonaparte," in Marx and Frederick Engels, *Selected Works*, trans. pub., 3 vols. (Moscow, 1969), 1:398. See V. Gordon Childe, *Man Makes Himself* (London, 1941). Indeed, Althusser's revolt in the 1960s against humanism in Marx was in part a jihad against the remnants of Vico in the savant's texts; see Étienne Balibar, personal communication to author, 1 Dec. 2007. I am grateful to Ian Bedford for drawing my attention to complexities in Marx's connections to Vico.

14. David Roberts describes Collingwood as "the lonely Oxford historicist. . . , in important respects a follower of Croce's" (David D. Roberts, *Benedetto Croce and the Uses of Historicism* [Berkeley, 1987], p. 325).

15. On Croce's misreading of Vico, see the discussion in general in Cecilia Miller, *Giambattista Vico: Imagination and Historical Knowledge* (Basingstoke, 1993), and James C. Morrison, "Vico's Principle of *Verum* is *Factum* and the Problem of Historicism," *Journal of the History of Ideas* 39 (Oct.–Dec. 1978): 579–95.

nature are mere events, not the acts of agents whose thought the scientist endeavours to trace." Hence, "all history properly so called is the history of human affairs." The historian's job is "to think himself into [an] action, to discern the thought of its agent." A distinction, therefore, has "to be made between historical and non-historical human actions. . . . So far as man's conduct is determined by what may be called his animal nature, his impulses and appetites, it is non-historical; the process of those activities is a natural process." Thus, says Collingwood, "the historian is not interested in the fact that men eat and sleep and make love and thus satisfy their natural appetites; but he is interested in the social customs which they create by their thought as a framework within which these appetites find satisfaction in ways sanctioned by convention and morality." Only the history of the social construction of the body, not the history of the body as such, can be studied. By splitting the human into the natural and the social or cultural, Collingwood saw no need to bring the two together.[16]

In discussing Croce's 1893 essay "History Subsumed under the Concept of Art," Collingwood wrote, "Croce, by denying [the German idea] that history was a science at all, cut himself at one blow loose from naturalism, and set his face towards an idea of history as something radically different from nature."[17] David Roberts gives a fuller account of the more mature position in Croce. Croce drew on the writings of Ernst Mach and Henri Poincaré to argue that "the concepts of the natural sciences are human constructs elaborated for human purposes." "When we peer into nature," he said, "we find only ourselves." We do not "understand ourselves best as part of the natural world." So, as Roberts puts it, "Croce proclaimed that there is no world but the human world, then took over the central doctrine of Vico that we can know the human world because we have made it." For Croce, then, all material objects were subsumed into human thought. No rocks, for example, existed in themselves. Croce's idealism, Roberts explains, "does not mean that rocks, for example, 'don't exist' without human beings to think them. Apart from human concern and language, they neither exist nor do not exist, since 'exist' is a human concept that has meaning only within a context of human concerns and purposes."[18] Both Croce and Collingwood would thus enfold human history and nature, to the extent that the latter could be said to have history, into purposive human action. What exists beyond that does not "exist" because it does not exist for humans in any meaningful sense.

16. Collingwood, *The Idea of History* (1946; New York, 1976), pp. 214, 212, 213, 216.
17. Ibid., p. 193.
18. Roberts, *Benedetto Croce and the Uses of Historicism*, pp. 59, 60, 62.

In the twentieth century, however, other arguments, more sociological or materialist, have existed alongside the Viconian one. They too have continued to justify the separation of human from natural history. One influential though perhaps infamous example would be the booklet on the Marxist philosophy of history that Stalin published in 1938, *Dialectical and Historical Materialism*. This is how Stalin put the problem:

> Geographical environment is unquestionably one of the constant and indispensable conditions of development of society and, of course, . . . [it] accelerates or retards its development. But its influence is not the *determining* influence, inasmuch as the changes and development of society proceed at an incomparably faster rate than the changes and development of geographical environment. In the space of 3000 years three different social systems have been successfully superseded in Europe: the primitive communal system, the slave system and the feudal system. . . . Yet during this period geographical conditions in Europe have either not changed at all, or have changed so slightly that geography takes no note of them. And that is quite natural. Changes in geographical environment of any importance require millions of years, whereas a few hundred or a couple of thousand years are enough for even very important changes in the system of human society.[19]

For all its dogmatic and formulaic tone, Stalin's passage captures an assumption perhaps common to historians of the mid-twentieth century: man's environment did change but changed so slowly as to make the history of man's relation to his environment almost timeless and thus not a subject of historiography at all. Even when Fernand Braudel rebelled against the state of the discipline of history as he found it in the late 1930s and proclaimed his rebellion later in 1949 through his great book *The Mediterranean*, it was clear that he rebelled mainly against historians who treated the environment simply as a silent and passive backdrop to their historical narratives, something dealt with in the introductory chapter but forgotten thereafter, as if, as Braudel put it, "the flowers did not come back every spring, the flocks of sheep migrate every year, or the ships sail on a real sea that changes with the seasons." In composing *The Mediterranean,* Braudel wanted to write a history in which the seasons—"a history of constant repetition, ever-recurring cycles"—and other recurrences in

19. Joseph Stalin, *Dialectical and Historical Materialism* (1938), www.marxists.org/reference/archive/stalin/works/1938/09.htm

nature played an active role in molding human actions.[20] The environment, in that sense, had an agentive presence in Braudel's pages, but the idea that nature was mainly repetitive had a long and ancient history in European thought, as Gadamer showed in his discussion of Johann Gustav Droysen.[21] Braudel's position was no doubt a great advance over the kind of nature-as-a-backdrop argument that Stalin developed. But it shared a fundamental assumption, too, with the stance adopted by Stalin: the history of "man's relationship to the environment" was so slow as to be "almost timeless."[22] In today's climatologists' terms, we could say that Stalin and Braudel and others who thought thus did not have available to them the idea, now widespread in the literature on global warming, that the climate, and hence the overall environment, can sometimes reach a tipping point at which this slow and apparently timeless backdrop for human actions transforms itself with a speed that can only spell disaster for human beings.

If Braudel, to some degree, made a breach in the binary of natural/human history, one could say that the rise of environmental history in the late twentieth century made the breach wider. It could even be argued that environmental historians have sometimes indeed progressed towards producing what could be called natural histories of man. But there is a very important difference between the understanding of the human being that these histories have been based on and the agency of the human now being proposed by scientists writing on climate change. Simply put, environmental history, where it was not straightforwardly cultural, social, or economic history, looked upon human beings as biological agents. Alfred Crosby, Jr., whose book *The Columbian Exchange* did much to pioneer the "new" environmental histories in the early 1970s, put the point thus in his original preface: "Man is a biological entity before he is a Roman Catholic or a capitalist or anything else."[23] The recent book by Daniel Lord Smail, *On Deep History and the Brain*, is adventurous in attempting to connect knowledge gained from evolutionary and neurosciences with human his-

20. Fernand Braudel, "Preface to the First Edition," *The Mediterranean and the Mediterranean World in the Age of Philip II*, trans. Siân Reynolds, 2 vols. (1949; London, 1972), 1:20. See also Peter Burke, *The French Historical Revolution: The "Annales" School, 1929–89* (Stanford, Calif., 1990), pp. 32–64.

21. See Hans-Georg Gadamer, *Truth and Method*, 2d ed., trans. Joel Weinsheimer and Donald G. Marshall (1975, 1979; London, 1988), pp. 214–18. See also Bonnie G. Smith, "Gender and the Practices of Scientific History: The Seminar and Archival Research in the Nineteenth Century," *American Historical Review* 100 (Oct. 1995): 1150–76.

22. Braudel, "Preface to the First Edition," p. 20.

23. Alfred W. Crosby, Jr., *The Columbian Exchange: Biological and Cultural Consequences of 1492* (1972; London, 2003), p. xxv.

tories. Smail's book pursues possible connections between biology and culture—between the history of the human brain and cultural history, in particular—while being always sensitive to the limits of biological reasoning. But it is the history of human biology and not any recent theses about the newly acquired geological agency of humans that concerns Smail.[24]

Scholars writing on the current climate-change crisis are indeed saying something significantly different from what environmental historians have said so far. In unwittingly destroying the artificial but time-honored distinction between natural and human histories, climate scientists posit that the human being has become something much larger than the simple biological agent that he or she always has been. Humans now wield a geological force. As Oreskes puts it: "To deny that global warming is real is precisely to deny that humans have become geological agents, changing the most basic physical processes of the earth."

> For centuries, [she continues,] scientists thought that earth processes were so large and powerful that nothing we could do could change them. This was a basic tenet of geological science: that human chronologies were insignificant compared with the vastness of geological time; that human activities were insignificant compared with the force of geological processes. And once they were. But no more. There are now so many of us cutting down so many trees and burning so many billions of tons of fossil fuels that we have indeed become geological agents. We have changed the chemistry of our atmosphere, causing sea level to rise, ice to melt, and climate to change. There is no reason to think otherwise.[25]

Biological agents, geological agents—two different names with very different consequences. Environmental history, to go by Crosby's masterful survey of the origins and the state of the field in 1995, has much to do with biology and geography but hardly ever imagined human impact on the planet on a geological scale. It was still a vision of man "as a prisoner of climate," as Crosby put it quoting Braudel, and not of man as the maker of it.[26] To call human beings geological agents is to scale up our imagination of the human. Humans are biological agents, both collectively and as individuals. They have always been so. There was no point in human history when humans were not biological agents. But we can become geological agents only historically and collectively, that is, when we have reached

24. See Daniel Lord Smail, *On Deep History and the Brain* (Berkeley, 2008), pp. 74–189.
25. Oreskes, "The Scientific Consensus," p. 93.
26. Crosby Jr., "The Past and Present of Environmental History," *American Historical Review* 100 (Oct. 1995): 1185.

numbers and invented technologies that are on a scale large enough to have an impact on the planet itself. To call ourselves geological agents is to attribute to us a force on the same scale as that released at other times when there has been a mass extinction of species. We seem to be currently going through that kind of a period. The current "rate in the loss of species diversity," specialists argue, "is similar in intensity to the event around 65 million years ago which wiped out the dinosaurs."[27] Our footprint was not always that large. Humans began to acquire this agency only since the Industrial Revolution, but the process really picked up in the second half of the twentieth century. Humans have become geological agents very recently in human history. In that sense, we can say that it is only very recently that the distinction between human and natural histories—much of which had been preserved even in environmental histories that saw the two entities in interaction—has begun to collapse. For it is no longer a question simply of man having an interactive relation with nature. This humans have always had, or at least that is how man has been imagined in a large part of what is generally called the Western tradition.[28] Now it is being claimed that humans are a force of nature in the geological sense. A fundamental assumption of Western (and now universal) political thought has come undone in this crisis.[29]

Thesis 2: The Idea of the Anthropocene, the New Geological Epoch When Humans Exist as a Geological Force, Severely Qualifies Humanist Histories of Modernity/Globalization

How to combine human cultural and historical diversity with human freedom has formed one of the key underlying questions of human histories written of the period from 1750 to the years of present-day globalization. Diversity, as Gadamer pointed out with reference to Leopold von Ranke, was itself a figure of freedom in the historian's imagination of the

27. Will Steffen, director of the Centre for Resource and Environmental Studies at the Australian National University, quoted in "Humans Creating New 'Geological Age,'" *The Australian*, 31 Mar. 2008, www.theaustralian.news.com.au/story/0,,23458148-5006787,00.html. Steffen's reference was the Millennium Ecosystem Assessment Report of 2005. See also Neil Shubin, "The Disappearance of Species," *Bulletin of the American Academy of Arts and Sciences* 61 (Spring 2008): 17–19.

28. Bill McKibben's argument about the "end of nature" implied the end of nature as "a separate realm that had always served to make us feel smaller" (Bill McKibben, *The End of Nature* [1989; New York, 2006], p. xxii).

29. Bruno Latour's *Politics of Nature: How to Bring the Sciences into Democracy*, trans. Catherine Porter (1999; Cambridge, Mass., 2004), written before the intensification of the debate on global warming, calls into question the entire tradition of organizing the idea of politics around the assumption of a separate realm of nature and points to the problems that this assumption poses for contemporary questions of democracy.

historical process.[30] *Freedom* has, of course, meant different things at different times, ranging from ideas of human and citizens' rights to those of decolonization and self-rule. Freedom, one could say, is a blanket category for diverse imaginations of human autonomy and sovereignty. Looking at the works of Kant, Hegel, or Marx; nineteenth-century ideas of progress and class struggle; the struggle against slavery; the Russian and Chinese revolutions; the resistance to Nazism and Fascism; the decolonization movements of the 1950s and 1960s and the revolutions in Cuba and Vietnam; the evolution and explosion of the rights discourse; the fight for civil rights for African Americans, indigenous peoples, Indian *Dalits,* and other minorities; down to the kind of arguments that, say, Amartya Sen put forward in his book *Development as Freedom*, one could say that freedom has been the most important motif of written accounts of human history of these two hundred and fifty years. Of course, as I have already noted, freedom has not always carried the same meaning for everyone. Francis Fukuyama's understanding of freedom would be significantly different from that of Sen. But this semantic capaciousness of the word only speaks to its rhetorical power.

In no discussion of freedom in the period since the Enlightenment was there ever any awareness of the geological agency that human beings were acquiring at the same time as and through processes closely linked to their acquisition of freedom. Philosophers of freedom were mainly, and understandably, concerned with how humans would escape the injustice, oppression, inequality, or even uniformity foisted on them by other humans or human-made systems. Geological time and the chronology of human histories remained unrelated. This distance between the two calendars, as we have seen, is what climate scientists now claim has collapsed. The period I have mentioned, from 1750 to now, is also the time when human beings switched from wood and other renewable fuels to large-scale use of fossil fuel—first coal and then oil and gas. The mansion of modern freedoms stands on an ever-expanding base of fossil-fuel use. Most of our freedoms so far have been energy-intensive. The period of human history usually associated with what we today think of as the institutions of civilization—the beginnings of agriculture, the founding of cities, the rise of the religions we know, the invention of writing—began about ten thousand years ago, as the planet moved from one geological period, the last ice age or the Pleistocene, to the more recent and warmer Holocene. The Holocene is the period we are supposed to be in; but the possibility of

30. Gadamer, *Truth and Method*, p. 206: The historian "knows that everything could have been different, and every acting individual could have acted differently."

anthropogenic climate change has raised the question of its termination. Now that humans—thanks to our numbers, the burning of fossil fuel, and other related activities—have become a geological agent on the planet, some scientists have proposed that we recognize the beginning of a new geological era, one in which humans act as a main determinant of the environment of the planet. The name they have coined for this new geological age is Anthropocene. The proposal was first made by the Nobel-winning chemist Paul J. Crutzen and his collaborator, a marine science specialist, Eugene F. Stoermer. In a short statement published in 2000, they said, "Considering . . . [the] major and still growing impacts of human activities on earth and atmosphere, and at all, including global, scales, it seems to us more than appropriate to emphasize the central role of mankind in geology and ecology by proposing to use the term 'anthropocene' for the current geological epoch."[31] Crutzen elaborated on the proposal in a short piece published in *Nature* in 2002:

> For the past three centuries, the effects of humans on the global environment have escalated. Because of these anthropogenic emissions of carbon dioxide, global climate may depart significantly from natural behaviour for many millennia to come. It seems appropriate to assign the term "Anthropocene" to the present, . . . human-dominated, geological epoch, supplementing the Holocene—the warm period of the past 10–12 millennia. The Anthropocene could be said to have started in the latter part of the eighteenth century, when analyses of air trapped in polar ice showed the beginning of growing global concentrations of carbon dioxide and methane. This date also happens to coincide with James Watt's design of the steam engine in 1784.[32]

It is, of course, true that Crutzen's saying so does not make the Anthropocene an officially accepted geologic period. As Mike Davis comments, "in geology, as in biology or history, periodization is a complex, controversial art," involving, always, vigorous debates and contestation.[33] The name Holocene for "the post-glacial geological epoch of the past ten to twelve thousand years" ("A," p. 17), for example, gained no immediate acceptance when proposed—apparently by Sir Charles Lyell—in 1833. The International Geological Congress officially adopted the name at their meeting in

31. Paul J. Crutzen and Eugene F. Stoermer, "The Anthropocene," *IGBP [International Geosphere-Biosphere Programme] Newsletter* 41 (2000): 17; hereafter abbreviated "A."

32. Crutzen, "Geology of Mankind," *Nature*, 3 Jan. 2002, p. 23.

33. Mike Davis, "Living on the Ice Shelf: Humanity's Meltdown," 26 June 2008, tomdispatch.com/post/174949; hereafter abbreviated "LIS." I am grateful to Lauren Berlant for bringing this essay to my attention.

Bologna after about fifty years in 1885 (see "A," p. 17). The same goes for Anthropocene. Scientists have engaged Crutzen and his colleagues on the question of when exactly the Anthropocene may have begun. But the February 2008 newsletter of the Geological Society of America, *GSA Today*, opens with a statement signed by the members of the Stratigraphy Commission of the Geological Society of London accepting Crutzen's definition and dating of the Anthropocene.[34] Adopting a "conservative" approach, they conclude: "Sufficient evidence has emerged of stratigraphically significant change (both elapsed and imminent) for recognition of the Anthropocene—currently a vivid yet informal metaphor of global environmental change—as a new geological epoch to be considered for formalization by international discussion."[35] There is increasing evidence that the term is gradually winning acceptance among social scientists as well.[36]

So, has the period from 1750 to now been one of freedom or that of the Anthropocene? Is the Anthropocene a critique of the narratives of freedom? Is the geological agency of humans the price we pay for the pursuit of freedom? In some ways, yes. As Edward O. Wilson said in his *The Future of Life*: "Humanity has so far played the role of planetary killer, concerned only with its own short-term survival. We have cut much of the heart out of biodiversity. . . . If Emi, the Sumatran rhino could speak, she might tell us that the twenty-first century is thus far no exception."[37] But the relation between Enlightenment themes of freedom and the collapsing of human and geological chronologies seems more complicated and contradictory than a simple binary would allow. It is true that human beings have tumbled into being a geological agent through our own decisions. The Anthropocene, one might say, has been an unintended consequence of human choices. But it is also clear that for humans any thought of the way out of our current predicament cannot but refer to the idea of deploying reason in global, collective life. As Wilson put it: "We know more about the prob-

34. See William F. Ruddiman, "The Anthropogenic Greenhouse Era Began Thousands of Years Ago," *Climatic Change* 61, no. 3 (2003): 261–93; Crutzen and Steffen, "How Long Have We Been in the Anthropocene Era?" *Climatic Change* 61, no. 3 (2003): 251–57; and Jan Zalasiewicz et al., "Are We Now Living in the Anthropocene?" *GSA Today* 18 (Feb. 2008): 4–8. I am grateful to Neptune Srimal for this reference.

35. Zalasiewicz et al., "Are We Now Living in the Anthropocene?" p. 7. Davis described the London Society as "the world's oldest association of Earth scientists, founded in 1807" ("LIS").

36. See, for instance, Libby Robin and Steffen, "History for the Anthropocene," *History Compass* 5, no. 5 (2007): 1694–1719, and Jeffrey D. Sachs, "The Anthropocene," *Common Wealth: Economics for a Crowded Planet* (New York, 2008), pp. 57–82. Thanks to Debjani Ganguly for drawing my attention to the essay by Robin and Steffen, and to Robin for sharing it with me.

37. Edward O. Wilson, *The Future of Life* (New York, 2002), p. 102; hereafter abbreviated *FL*.

lem now. . . . We know what to do" (*FL,* p. 102). Or, to quote Crutzen and Stoermer again:

> Mankind will remain a major geological force for many millennia, maybe millions of years, to come. To develop a world-wide accepted strategy leading to sustainability of ecosystems against human-induced stresses will be one of the great future tasks of mankind, requiring intensive research efforts and wise application of knowledge thus acquired. . . . An exciting, but also difficult and daunting task lies ahead of the global research and engineering community to guide mankind towards global, sustainable, environmental management. ["A," p. 18]

Logically, then, in the era of the Anthropocene, we need the Enlightenment (that is, reason) even more than in the past. There is one consideration though that qualifies this optimism about the role of reason and that has to do with the most common shape that freedom takes in human societies: politics. Politics has never been based on reason alone. And politics in the age of the masses and in a world already complicated by sharp inequalities between and inside nations is something no one can control. "Sheer demographic momentum," writes Davis, "will increase the world's urban population by 3 billion people over the next 40 years (90% of them in poor cities), and no one—absolutely no one [including, one might say, scholars on the Left]—has a clue how a planet of slums, with growing food and energy crises, will accommodate their biological survival, much less their inevitable aspirations to basic happiness and dignity" ("LIS").

It is not surprising then that the crisis of climate change should produce anxieties precisely around futures that we cannot visualize. Scientists' hope that reason will guide us out of the present predicament is reminiscent of the social opposition between the myth of Science and the actual politics of the sciences that Bruno Latour discusses in his *Politics of Nature*.[38] Bereft of any sense of politics, Wilson can only articulate his sense of practicality as a philosopher's hope mixed with anxiety: "Perhaps we will act in time" (*FL,* p. 102). Yet the very science of global warming produces of necessity political imperatives. Tim Flannery's book, for instance, raises the dark prospects of an "Orwellian nightmare" in a chapter entitled "2084: The Carbon Dictatorship?"[39] Mark Maslin concludes his book with some gloomy thoughts: "It is unlikely that global politics will solve global warming. Technofixes are dangerous or cause problems as bad as the ones they are

38. See Latour, *Politics of Nature*.
39. Flannery, *The Weather Makers*, p. xiv.

aimed at fixing. . . . [Global warming] requires nations and regions to plan for the next 50 years, something that most societies are unable to do because of the very short-term nature of politics." His recommendation, "we must prepare for the worst and adapt," coupled with Davis's observations about the coming "planet of slums" places the question of human freedom under the cloud of the Anthropocene.[40]

Thesis 3: The Geological Hypothesis Regarding the Anthropocene Requires Us to Put Global Histories of Capital in Conversation with the Species History of Humans

Analytic frameworks engaging questions of freedom by way of critiques of capitalist globalization have *not*, in any way, become obsolete in the age of climate change. If anything, as Davis shows, climate change may well end up accentuating all the inequities of the capitalist world order if the interests of the poor and vulnerable are neglected (see "LIS"). Capitalist globalization exists; so should its critiques. But these critiques do not give us an adequate hold on human history once we accept that the crisis of climate change is here with us and may exist as part of this planet for much longer than capitalism or long after capitalism has undergone many more historic mutations. The problematic of globalization allows us to read climate change only as a crisis of capitalist management. While there is no denying that climate change has profoundly to do with the history of capital, a critique that is only a critique of capital is not sufficient for addressing questions relating to human history once the crisis of climate change has been acknowledged and the Anthropocene has begun to loom on the horizon of our present. The geologic now of the Anthropocene has become entangled with the now of human history.

Scholars who study human beings in relation to the crisis of climate change and other ecological problems emerging on a world scale make a distinction between the recorded history of human beings and their deep history. Recorded history refers, very broadly, to the ten thousand years that have passed since the invention of agriculture but more usually to the last four thousand years or so for which written records exist. Historians of modernity and "early modernity" usually move in the archives of the last four hundred years. The history of humans that goes beyond these years of written records constitutes what other students of human pasts—not professional historians—call deep history. As Wilson, one of the main pro-

40. Maslin, *Global Warming*, p. 147. For a discussion of how fossil fuels created both the possibilities for and the limits of democracy in the twentieth century, see Timothy Mitchell, "Carbon Democracy," forthcoming in *Economy and Society*. I am grateful to Mitchell for letting me cite this unpublished paper.

ponents of this distinction, writes: "Human behavior is seen as the product not just of recorded history, ten thousand years recent, but of deep history, the combined genetic and cultural changes that created humanity over hundreds of [thousands of] years."[41] It, of course, goes to the credit of Smail that he has attempted to explain to professional historians the intellectual appeal of deep history.[42]

Without such knowledge of the deep history of humanity it would be difficult to arrive at a secular understanding of why climate change constitutes a crisis for humans. Geologists and climate scientists may explain why the current phase of global warming—as distinct from the warming of the planet that has happened before—is anthropogenic in nature, but the ensuing crisis for humans is not understandable unless one works out the consequences of that warming. The consequences make sense only if we think of humans as a form of life and look on human history as part of the history of life on this planet. For, ultimately, what the warming of the planet threatens is not the geological planet itself but the very conditions, both biological and geological, on which the survival of human life as developed in the Holocene period depends.

The word that scholars such as Wilson or Crutzen use to designate life in the human form—and in other living forms—is *species.* They speak of the human being as a species and find that category useful in thinking about the nature of the current crisis. It is a word that will never occur in any standard history or political-economic analysis of globalization by scholars on the Left, for the analysis of globalization refers, for good reasons, only to the recent and recorded history of humans. Species thinking, on the other hand, is connected to the enterprise of deep history. Further, Wilson and Crutzen actually find such thinking essential to visualizing human well-being. As Wilson writes: "We need this longer view . . . not only to understand our species but more firmly to secure its future" (*SN,* p. x). The task of placing, historically, the crisis of climate change thus requires us to bring together intellectual formations that are somewhat in tension with each other: the planetary and the global; deep and recorded histories; species thinking and critiques of capital.

In saying this, I work somewhat against the grain of historians' thinking on globalization and world history. In a landmark essay published in 1995 and entitled "World History in a Global Age," Michael Geyer and Charles Bright wrote, "At the end of the twentieth century, we encounter, not a

41. Wilson, *In Search of Nature* (Washington, D.C., 1996), pp. ix–x; hereafter abbreviated *SN*.

42. See Smail, *On Deep History and the Brain.*

universalizing and single modernity but an integrated world of multiple and multiplying modernities." "As far as world history is concerned," they said, "there is no universalizing spirit. . . . There are, instead, many very specific, very material and pragmatic practices that await critical reflection and historical study." Yet, thanks to global connections forged by trade, empires, and capitalism, "we confront a startling new condition: humanity, which has been the subject of world history for many centuries and civilizations, has now come into the purview of all human beings. This humanity is extremely polarized into rich and poor."[43] This humanity, Geyer and Bright imply in the spirit of the philosophies of difference, is not one. It does not, they write, "form a single homogenous civilization." "Neither is this humanity any longer a mere species or a natural condition. For the first time," they say, with some existentialist flourish, "we as human beings collectively constitute ourselves and, hence, are responsible for ourselves" ("WH," p. 1059). Clearly, the scientists who advocate the idea of the Anthropocene are saying something quite the contrary. They argue that because humans constitute a particular kind of species they can, in the process of dominating other species, acquire the status of a geologic force. Humans, in other words, have become a natural condition, at least today. How do we create a conversation between these two positions?

It is understandable that the biological-sounding talk of species should worry historians. They feel concerned about their finely honed sense of contingency and freedom in human affairs having to cede ground to a more deterministic view of the world. Besides, there are always, as Smail recognizes, dangerous historical examples of the political use of biology.[44] The idea of species, it is feared, in addition, may introduce a powerful degree of essentialism in our understanding of humans. I will return to the question of contingency later in this section, but, on the issue of essentialism, Smail helpfully points out why species cannot be thought of in essentialist terms:

> Species, according to Darwin, are not fixed entities with natural essences imbued in them by the Creator. . . . Natural selection does not homogenize the individuals of a species. . . . Given this state of affairs, the search for a normal . . . nature and body type [of any particular species] is futile. And so it goes for the equally futile quest to identify

43. Michael Geyer and Charles Bright, "World History in a Global Age," *American Historical Review* 100 (Oct. 1995): 1058–59; hereafter abbreviated "WH."

44. See Smail, *On Deep History and the Brain*, p. 124.

"human nature." Here, as in so many areas, biology and cultural studies are fundamentally congruent.[45]

It is clear that different academic disciplines position their practitioners differently with regard to the question of how to view the human being. All disciplines have to create their objects of study. If medicine or biology reduces the human to a certain specific understanding of him or her, humanist historians often do not realize that the protagonists of their stories—persons—are reductions, too. Absent personhood, there is no human subject of history. That is why Derrida earned the wrath of Foucault by pointing out that any desire to enable or allow madness *itself* to speak in a history of madness would be "the *maddest* aspect" of the project.[46] An object of critical importance to humanists of all traditions, personhood is nevertheless no less of a reduction of or an abstraction from the embodied and whole human being than, say, the human skeleton discussed in an anatomy class.

The crisis of climate change calls on academics to rise above their disciplinary prejudices, for it is a crisis of many dimensions. In that context, it is interesting to observe the role that the category of species has begun to play among scholars, including economists, who have already gone further than historians in investigating and explaining the nature of this crisis. The economist Jeffrey Sachs's book, *Common Wealth*, meant for the educated but lay public, uses the idea of species as central to its argument and devotes a whole chapter to the Anthropocene.[47] In fact, the scholar from whom Sachs solicited a foreword for his book was none other than Edward Wilson. The concept of species plays a quasi-Hegelian role in Wilson's foreword in the same way as the multitude or the masses in Marxist writings. If Marxists of various hues have at different times thought that the good of humanity lay in the prospect of the oppressed or the multitude realizing their own global unity through a process of coming into self-consciousness, Wilson pins his hope on the unity possible through our collective self-recognition as a species: "Humanity has consumed or transformed enough of Earth's irreplaceable resources to be in better shape than ever before. We are smart enough and now, one hopes, well informed enough to achieve self-understanding as a unified species. . . . We will be wise to look on ourselves as a species."[48]

45. Ibid. pp. 124–25.

46. Jacques Derrida, "Cogito and the History of Madness," *Writing and Difference*, trans. Alan Bass (Chicago, 1978), p. 34.

47. See Sachs, *Common Wealth*, pp. 57–82.

48. Wilson, foreword to Sachs, *Common Wealth*, p. xii. Students of Marx may be reminded here of the use of the category "species being" by the young Marx.

Yet doubts linger about the use of the idea of species in the context of climate change, and it would be good to deal with one that can easily arise among critics on the Left. One could object, for instance, that all the anthropogenic factors contributing to global warming—the burning of fossil fuel, industrialization of animal stock, the clearing of tropical and other forests, and so on—are after all part of a larger story: the unfolding of capitalism in the West and the imperial or quasi-imperial domination by the West of the rest of the world. It is from that recent history of the West that the elite of China, Japan, India, Russia, and Brazil have drawn inspiration in attempting to develop their own trajectories toward superpower politics and global domination through capitalist economic, technological, and military might. If this is broadly true, then does not the talk of species or mankind simply serve to hide the reality of capitalist production and the logic of imperial—formal, informal, or machinic in a Deleuzian sense—domination that it fosters? Why should one include the poor of the world—whose carbon footprint is small anyway—by use of such all-inclusive terms as *species* or *mankind* when the blame for the current crisis should be squarely laid at the door of the rich nations in the first place and of the richer classes in the poorer ones?

We need to stay with this question a little longer; otherwise the difference between the present historiography of globalization and the historiography demanded by anthropogenic theories of climate change will not be clear to us. Though some scientists would want to date the Anthropocene from the time agriculture was invented, my readings mostly suggest that our falling into the Anthropocene was neither an ancient nor an inevitable happening. Human civilization surely did not begin on condition that, one day in his history, man would have to shift from wood to coal and from coal to petroleum and gas. That there was much historical contingency in the transition from wood to coal as the main source of energy has been demonstrated powerfully by Kenneth Pomeranz in his pathbreaking book *The Great Divergence*.[49] Coincidences and historical accidents similarly litter the stories of the "discovery" of oil, of the oil tycoons, and of the automobile industry as they do any other histories.[50] Capitalist societies themselves have not remained the same since the beginning of capitalism.[51]

49. See Kenneth Pomeranz, *The Great Divergence: Europe, China, and the Making of the Modern World Economy* (Princeton, N.J., 2000).

50. See Mitchell, "Carbon Democracy." See also Edwin Black, *Internal Combustion: How Corporations and Governments Addicted the World to Oil and Derailed the Alternatives* (New York, 2006).

51. Arrighi's *The Long Twentieth Century* is a good guide to these fluctuations in the fortunes of capitalism.

Human population, too, has dramatically increased since the Second World War. India alone is now more than three times more populous than at independence in 1947. Clearly, nobody is in a position to claim that there is something inherent to the human species that has pushed us finally into the Anthropocene. We have stumbled into it. The way to it was no doubt through industrial civilization. (I do not make a distinction here between the capitalist and socialist societies we have had so far, for there was never any principled difference in their use of fossil fuel.)

If the industrial way of life was what got us into this crisis, then the question is, Why think in terms of species, surely a category that belongs to a much longer history? Why could not the narrative of capitalism—and hence its critique—be sufficient as a framework for interrogating the history of climate change and understanding its consequences? It seems true that the crisis of climate change has been necessitated by the high-energy-consuming models of society that capitalist industrialization has created and promoted, but the current crisis has brought into view certain other conditions for the existence of life in the human form that have no intrinsic connection to the logics of capitalist, nationalist, or socialist identities. They are connected rather to the history of life on this planet, the way different life-forms connect to one another, and the way the mass extinction of one species could spell danger for another. Without such a history of life, the crisis of climate change has no human "meaning." For, as I have said before, it is not a crisis for the inorganic planet in any meaningful sense.

In other words, the industrial way of life has acted much like the rabbit hole in Alice's story; we have slid into a state of things that forces on us a recognition of some of the parametric (that is, boundary) conditions for the existence of institutions central to our idea of modernity and the meanings we derive from them. Let me explain. Take the case of the agricultural revolution, so called, of ten thousand years ago. It was not just an expression of human inventiveness. It was made possible by certain changes in the amount of carbon dioxide in the atmosphere, a certain stability of the climate, and a degree of warming of the planet that followed the end of the Ice Age (the Pleistocene era)—things over which human beings had no control. "There can be little doubt," writes one of the editors of *Humans at the End of the Ice Age*, "that the basic phenomenon—the waning of the Ice Age—was the result of the Milankovich phenomena: the orbital and tilt relationships between the Earth and the Sun."[52] The temperature of the planet stabilized within a zone that allowed grass to grow. Barley and wheat

52. Lawrence Guy Straus, "The World at the End of the Last Ice Age," in *Humans at the*

are among the oldest of such grasses. Without this lucky "long summer" or what one climate scientist has called an "extraordinary" "fluke" of nature in the history of the planet, our industrial-agricultural way of life would not have been possible.[53] In other words, whatever our socioeconomic and technological choices, whatever the rights we wish to celebrate as our freedom, we cannot afford to destabilize conditions (such as the temperature zone in which the planet exists) that work like boundary parameters of human existence. These parameters are independent of capitalism or socialism. They have been stable for much longer than the histories of these institutions and have allowed human beings to become the dominant species on earth. Unfortunately, we have now ourselves become a geological agent disturbing these parametric conditions needed for our own existence.

This is not to deny the historical role that the richer and mainly Western nations of the world have played in emitting greenhouse gases. To speak of species thinking is not to resist the politics of "common but differentiated responsibility" that China, India, and other developing countries seem keen to pursue when it comes to reducing greenhouse gas emissions.[54] Whether we blame climate change on those who are retrospectively guilty—that is, blame the West for their past performance—or those who are prospectively guilty (China has just surpassed the United States as the largest emitter of carbon dioxide, though not on a per capita basis) is a question that is tied no doubt to the histories of capitalism and modernization.[55] But scientists' discovery of the fact that human beings have in the process become a geological agent points to a shared catastrophe that we have all fallen into. Here is how Crutzen and Stoermer describe that catastrophe:

> The expansion of mankind . . . has been astounding. . . . During the past 3 centuries human population increased tenfold to 6000 million, accompanied e.g. by a growth in cattle population to 1400 million (about one cow per average size family). . . . In a few generations mankind is exhausting the fossil fuels that were generated over several

End of the Ice Age: The Archaeology of the Pleistocene–Holocene Transition, ed. Lawrence Guy Straus et al. (New York, 1996), p. 5.

53. Flannery, *Weather Makers,* pp. 63, 64.

54. Ashish Kothari, "The Reality of Climate Injustice," *The Hindu,* 18 Nov. 2007, www.hinduonnet.com/thehindu/mag/2007/11/18/stories/2007111850020100.htm

55. I have borrowed the idea of "retrospective" and "prospective" guilt from a discussion led at the Franke Institute for the Humanities by Peter Singer during the Chicago Humanities Festival, November 2007.

> hundred million years. The release of SO_2 . . . to the atmosphere by coal and oil burning, is at least two times larger than the sum of all natural emissions . . . ; more than half of all accessible fresh water is used by mankind; human activity has increased the species extinction rate by thousand to ten thousand fold in the tropical rain forests. . . . Furthermore, mankind releases many toxic substances in the environment. . . . The effects documented include modification of the geochemical cycle in large freshwater systems and occur in systems remote from primary sources. ["A," p. 17]

Explaining this catastrophe calls for a conversation between disciplines and between recorded and deep histories of human beings in the same way that the agricultural revolution of ten thousand years ago could not be explained except through a convergence of three disciplines: geology, archaeology, and history.[56]

Scientists such as Wilson or Crutzen may be politically naïve in not recognizing that reason may not be all that guides us in our effective collective choices—in other words, we may collectively end up making some unreasonable choices—but I find it interesting and symptomatic that they speak the language of the Enlightenment. They are not necessarily anticapitalist scholars, and yet clearly they are not for business-as-usual capitalism either. They see knowledge and reason providing humans not only a way out of this present crisis but a way of keeping us out of harm's way in the future. Wilson, for example, speaks of devising a "wiser use of resources" in a manner that sounds distinctly Kantian (*SN,* p. 199). But the knowledge in question is the knowledge of humans as a species, a species dependent on other species for its own existence, a part of the general history of life. Changing the climate, increasingly not only the average temperature of the planet but also the acidity and the level of the oceans, and destroying the food chain are actions that cannot be in the interest of our lives. These parametric conditions hold irrespective of our political choices. It is therefore impossible to understand global warming as a crisis without engaging the propositions put forward by these scientists. At the same time, the story of capital, the contingent history of our falling into the Anthropocene, cannot be denied by recourse to the idea of species, for the Anthropocene would not have been possible, even as a theory, without the history of industrialization. How do we hold the two together as we think the history of the world since the Enlightenment? How do we relate to a universal history of life—to universal thought, that is—while retaining what is of

56. See Colin Tudge, *Neanderthals, Bandits, and Farmers: How Agriculture Really Began* (New Haven, Conn., 1999), pp. 35–36.

obvious value in our postcolonial suspicion of the universal? The crisis of climate change calls for thinking simultaneously on both registers, to mix together the immiscible chronologies of capital and species history. This combination, however, stretches, in quite fundamental ways, the very idea of historical understanding.

Thesis 4: The Cross-Hatching of Species History and the History of Capital Is a Process of Probing the Limits of Historical Understanding

Historical understanding, one could say following the Diltheyan tradition, entails critical thinking that makes an appeal to some generic ideas about human experience. As Gadamer pointed out, Dilthey saw "the individual's private world of experience as the starting point for an expansion that, in a living transposition, fills out the narrowness and fortuitousness of his private experience with the infinity of what is available by re-experiencing the historical world." "*Historical consciousness,*" in this tradition, is thus "*a mode of self-knowledge*" garnered through critical reflections on one's own and others' (historical actors') experiences.[57] Humanist histories of capitalism will always admit of something called the experience of capitalism. E. P. Thompson's brilliant attempt to reconstruct working-class experience of capitalist labor, for instance, does not make sense without that assumption.[58] Humanist histories are histories that produce meaning through an appeal to our capacity not only to reconstruct but, as Collingwood would have said, to reenact in our own minds the experience of the past.

When Wilson then recommends in the interest of our collective future that we achieve self-understanding as a species, the statement does not correspond to any historical way of understanding and connecting pasts with futures through the assumption of there being an element of continuity to human experience. (See Gadamer's point mentioned above.) Who is the we? We humans never experience ourselves as a species. We can only intellectually comprehend or infer the existence of the human species but never experience it as such. There could be no phenomenology of us as a species. Even if we were to emotionally identify with a word like *mankind,* we would not know what being a species is, for, in species history, humans are only an instance of the concept species as indeed would be any other life form. But one never experiences being a concept.

57. Gadamer, *Truth and Method*, pp. 232, 234. See also Michael Ermarth, *Wilhelm Dilthey: The Critique of Historical Reason* (Chicago, 1978), pp. 310–22.

58. See E. P. Thompson, *The Making of the English Working Class* (Harmondsworth, 1963).

The discussion about the crisis of climate change can thus produce affect and knowledge about collective human pasts and futures that work at the limits of historical understanding. We experience specific effects of the crisis but not the whole phenomenon. Do we then say, with Geyer and Bright, that "humanity no longer comes into being through 'thought'" ("WH," p. 1060) or say with Foucault that "the human being no longer has any history"?[59] Geyer and Bright go on to write in a Foucaultian spirit: "Its [world history's] task is to make transparent the lineaments of power, underpinned by information, that compress humanity into a single humankind" ("WH," p. 1060).

This critique that sees humanity as an effect of power is, of course, valuable for all the hermeneutics of suspicion that it has taught postcolonial scholarship. It is an effective critical tool in dealing with national and global formations of domination. But I do not find it adequate in dealing with the crisis of global warming. First, inchoate figures of us all and other imaginings of humanity invariably haunt our sense of the current crisis. How else would one understand the title of Weisman's book, *The World without Us,* or the appeal of his brilliant though impossible attempt to depict the experience of New York after we are gone![60] Second, the wall between human and natural history has been breached. We may not experience ourselves as a geological agent, but we appear to have become one at the level of the species. And without that knowledge that defies historical understanding there is no making sense of the current crisis that affects us all. Climate change, refracted through global capital, will no doubt accentuate the logic of inequality that runs through the rule of capital; some people will no doubt gain temporarily at the expense of others. But the whole crisis cannot be reduced to a story of capitalism. Unlike in the crises of capitalism, there are no lifeboats here for the rich and the privileged (witness the drought in Australia or recent fires in the wealthy neighborhoods of California). The anxiety global warming gives rise to is reminiscent of the days when many feared a global nuclear war. But there is a very important difference. A nuclear war would have been a conscious decision on the part of the powers that be. Climate change is an unintended consequence of human actions and shows, only through scientific analysis, the effects of our actions as a species. Species may indeed be the name of a placeholder for an emergent, new universal history of humans that flashes up in the moment of the danger that is climate change. But we can never

59. Michel Foucault, *The Order of Things: An Archaeology of Human Knowledge,* trans. pub. (1966; New York, 1973), p. 368.

60. See Weisman, *The World without Us,* pp. 25–28.

understand this universal. It is not a Hegelian universal arising dialectically out of the movement of history, or a universal of capital brought forth by the present crisis. Geyer and Bright are right to reject those two varieties of the universal. Yet climate change poses for us a question of a human collectivity, an us, pointing to a figure of the universal that escapes our capacity to experience the world. It is more like a universal that arises from a shared sense of a catastrophe. It calls for a global approach to politics without the myth of a global identity, for, unlike a Hegelian universal, it cannot subsume particularities. We may provisionally call it a "negative universal history."[61]

61. I am grateful to Antonio Y. Vasquez-Arroyo for sharing with me his unpublished paper "Universal History Disavowed: On Critical Theory and Postcolonialism," where he has tried to develop this concept of negative universal history on the basis of his reading of Theodor Adorno and Walter Benjamin.